DESIGN AND CHECK DATA REQUIREMENTS

WASTE TREATMENT LAGOON

The following items must be addressed in the design folder for the Waste Treatment Lagoon. Engineering plans, specifications and reports shall include but are not limited to the following:

1. Location Map
2. Computations for Size
3. Quantity Computations as Needed
4. Soils Information Including Logs of Soil Test Pits
5. Soil Testing Results
6. Engineering Plans Shall Contain:

a. Profile along centerline of embankment.
b. Typical cross-sections of lagoon.
c. Profiles and cross-sections of emergency spillway, if used, or invert elevation of overflow pipe.
d. Depth and area of lagoon.
e. Type and adequacy of sealing treatment if needed.
f. Structural details of all components.
g. Type and location of staff gage.
h. Type and location of fencing and warning signs.
i. Drainage/grading plan, if needed.
j. Vegetative treatment.
k. Odor management and minimization requirements, if needed.
l. Appropriate specifications.

7. List of materials
8. Erosion & Sedimentation plan
9. Customized Inspection Plan
10. Operation & Maintenance Plan

Listed below are specific items that are required in the design:

TABLE OF CONTENTS

This organizes the design folder.

DESIGN DATA SHEET

Is sheet filled out and important data consistent with the Waste Management System plan and the Nutrient Management plan?

OPERATION AND MAINTENANCE PLAN

Is it clearly indicated at what times or intervals and at what depths or elevations the facility should be unloaded? Explain the use of the maximum and minimum operating level markers.

Is maintenance of other components addressed?

What type and size of equipment is being used to load/unload?

How is structure accessed?

Is emergency action plan complete?

If drains outlet within 50 feet of a water body, the plan must include a monthly inspection requirement. The plan must include provisions for intercepting a leak and drawing down the storage volume. The plan shall also include contingency provisions for removal of excess volume during the treatment period, due to unusual storm events or other causes.

SOILS AND FOUNDATION DATA

Document compliance with Act 187 (1996) before digging?

Written soils description for test pits and site specific comments are included?

Does the investigation go at least 2 feet deeper than the planned bottom?

Reference pit locations to site contour map.

Include soils lab data and clay liner calculations where applicable.

Document need for rock excavation, drainage, isolation from open foundation rock, and depth limitations based on soils investigation.

CONSTRUCTION SPECIFICATIONS

Enclose specification 359 and others (e.g. 313S, 342, 382, 606, 634) as applicable.

Include any “additional conditions” or items that are site specific or must be defined to supplement the standard specification. (See instructions for use of Specification 359.)

Add any special or "by-others" specifications.

ENGINEERING DRAWINGS

GENERAL

On each drawing sheet, the title block should show the operator's name, type of operation, county and the persons involved in drawing and designing the storage facility.

All treatment lagoon designs require approval by a registered Professional Engineer or an Engineer with NRCS job approval authority for the type, dimensions and capacity of the designed facility. If a DEP permit is required, additional details may be needed. If the structure is for a dairy operation, the drawings and specification must be submitted to the local dairy inspector prior to construction.

Include any standard drawings made by NRCS or designed by others and concurred in by NRCS that are needed, and include them in the drawing index on the cover sheet.

Listed are items that should be included:

PLAN VIEW SHEET(S)
North arrow
Utilities/roads
Bench mark(s)
Scale
Legend
Access
Existing structures
X-section locations
Construction limits
Foundation drainage & outlet locations
Component locations
Borrow area
Spoil area

SITE CONTOUR SHEET
(Preferably same as Plan View Sheet)
North arrow
Bench mark(s)
Scale
Soils test pit location
Existing structures
Contour lines
Property lines
Water well and spring location(s)
Water courses
Known sinkhole locations
Legend

CROSS-SECTION SHEET(S)
Two sections, minimum
Scale(s)
Soil test pit profile(s)
Loading structure/pipe
Unloading structure/pipe
Access ramp
Pipe profile(s)
Earth fill zones
Concrete & reinforcement
Slopes
Drainage configuration
Reference to detail drawings

SEQUENCING STATEMENT WITH:
E&S control
Construction sequences
Spoil and borrow areas
Required overbuild of fill
Special considerations
- Lining
- Special equipment
- Special joints

Vegetative requirements
Fencing and safety features
References to specific standards and drawings
Act 187 (1996) statement

EROSION & SEDIMENT CONTROL PLAN

See DEP's Erosion and Sediment Pollution Control Program Manual.

QUALITY ASSURANCE PLAN

What specific items need inspection and when?

Who will do the actual inspection?

Is any testing equipment required for the inspection?

OPERATION & MAINTENANCE PLAN

A written site specific O&M Plan, including:
Routine operational requirements
Unloading requirements (maximum and minimum operating level markers)
Freeboard requirements
Emergency Action Plan
Routine inspections of drain outlets
Safety precaution